Update on the 2020 Census Program

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Census Scientific Advisory Committee
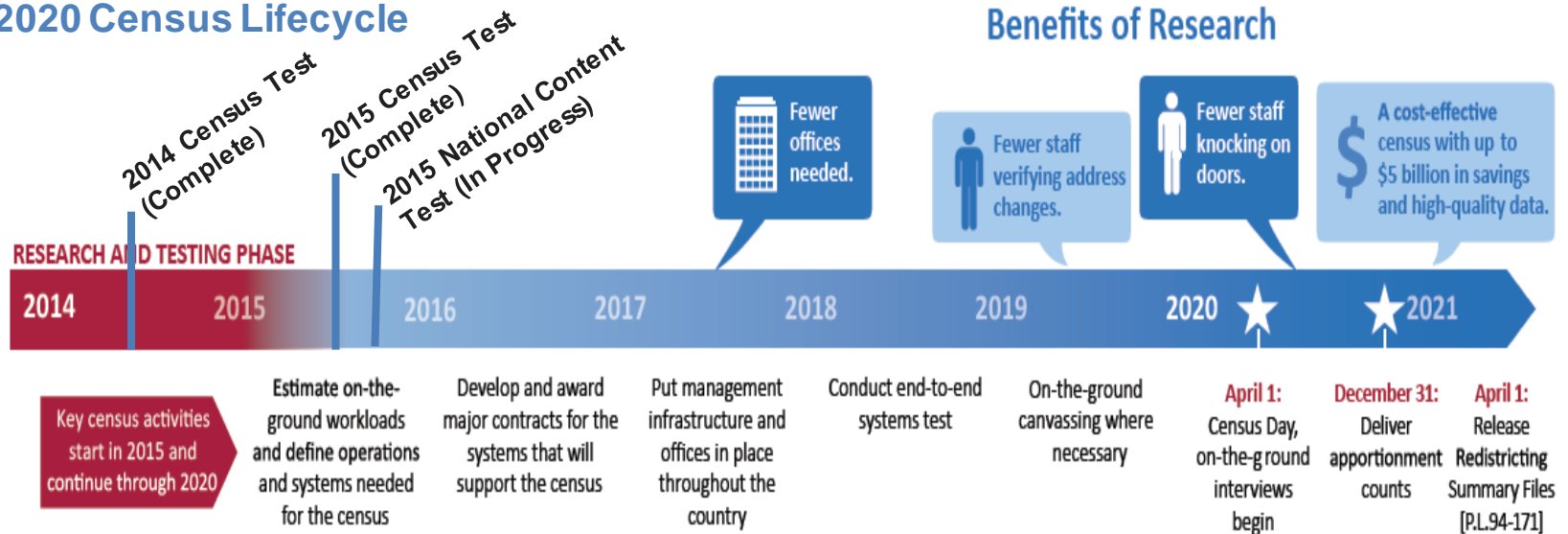Fall Meeting
September 17, 2015

2020 Census
Lifecycle Recap

In the next census, we will be trying to reach an increasingly diverse and growing population of around 330 million people in more than 140 million housing units.

The Census Bureau is conducting research in order to inform key design decisions by the end of FY 2015.

2020 Census Lifecycle

2014 Census Test (Complete)

2015 Census Test (Complete)

2015 National Content Test (In Progress)

Benefits of Research

Fewer offices needed.

Fewer staff verifying address changes.

Fewer staff knocking on doors.

A cost-effective census with up to $5 billion in savings and high-quality data.

RESEARCH AND TESTING PHASE

| 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |

Key census activities start in 2015 and continue through 2020

Estimate on-the-ground workloads and define operations and systems needed for the census

Develop and award major contracts for the systems that will support the census

Put management infrastructure and offices in place throughout the country

Conduct end-to-end systems test

On-the-ground canvassing where necessary

April 1: Census Day, on-the-ground interviews begin

December 31: Deliver apportionment counts

April 1: Release Redistricting Summary Files [P.L.94-171]

2020 Census
2020 Census Innovation Areas Recap

Up to
$5 Billion*
in Savings
Through:

Reengineering Field Operations

Optimizing Self-Response

Utilizing Administrative Records

Reengineering Address Canvassing

*This estimate is based off of the 2014 Census Lifecycle cost estimate.

2020 Census
Research: 2015 Census Test Recap

In 2015, we will conduct five tests:

1. **Human in the Loop Simulation (SIMEX):** Established a simulated operational control system (SIMEX) at Census Bureau headquarters which allowed managers the ability to test capturing and resolving issues in real time by using simulated data to support conceptual decisions that were testing in the 2015 Census Test

2. **Address Validation Test:** This test enables us to assess the performance of the methods and models that will help us develop the 2020 Census address list and define the address canvassing workloads needed for the operational design decision point in September 2015

3. **2015 Optimizing Self-Response Test:** Test reaching and engaging respondents to have them opt into a our 'Notify Me' campaign for the Census Tests

4. **2015 Census Test:** Our 2015 Census Test was conducted in two locations (Savannah, Georgia and Maricopa County, Arizona) and allowed the Census Bureau to employ a variety of new methods and advanced technologies under consideration for 2020 Census

5. **2015 National Content Test:** Evaluate and compare different versions of questions that will be asked in the 2020 Census as well as test different contact strategies for optimizing self-response

2015 Census Test
Optimizing Self-Response

- April 1, 2015 Census Day

- A site test conducted in the Savannah, Georgia media market area

- Continue testing "Notify Me" and "Non-ID" response to determine if we can optimize self and Internet response rates

- Research how advertising, outreach, and promotion can engage and motivate respondents for action

- Key Findings

  - Partnerships and advertising continue to be successful mechanisms for motivating self-response

  - While pre-registration was not an effective means for motivating self-response, mailing invitation letters and postcards were effective

  - We achieved high match rates for non-ID cases, and our real-time non-ID processing approach worked well

2015 Census Test

Reengineering Field Operations and Utilizing Administrative Records

- April 1, 2015 Census Day

- A site test in Maricopa County, Arizona

- 165,000 housing units in sample

- Reengineer the roles, responsibilities, and infrastructure for the field

- Automate tasks traditionally performed by humans

- Test and implement routing and navigation

- Test a Bring Your Own Device component

- Determine how administrative records and adaptive design can reduce the NRFU workload and determine contact strategies

- Preliminary Findings
  - Overall self-response rate was about 56.2 percent
  - New training approach reduced the allotted training from 32 hours to 18 hours
  - The COMPASS application was easy to use; however, experienced some freezes and crashes
  - Enumerators experienced challenges specific to our procedures, the interactions with the COMPASS application, and the management of assignments
  - Area Operations Support Center well run and alerts, entry of work availability, and routing successful

2015 National Content Test
In Progress

- September 1, 2015 Census Day

- Use a large nationally representative sample, including Puerto Rico

- Evaluate and compare different census content, including race and Hispanic origin, relationship, and within-household coverage

- Refine estimates of national self response and Internet response rates and continue testing different contact strategies for optimizing self response

- Conduct content re-interview that includes a subsample of respondents, to measure accuracy of race/origin and coverage

8/24
Begin Self Response Data Collection

9/1
Census Day

9/21 – 11/25
Conduct Re-Interview

Aug   Sept   Oct   Nov   Dec

8/24
Begin Questionnaire Assistance

8/24 – 9/22
Deliver Mail Materials

10/30
Complete Self Response Data Collection
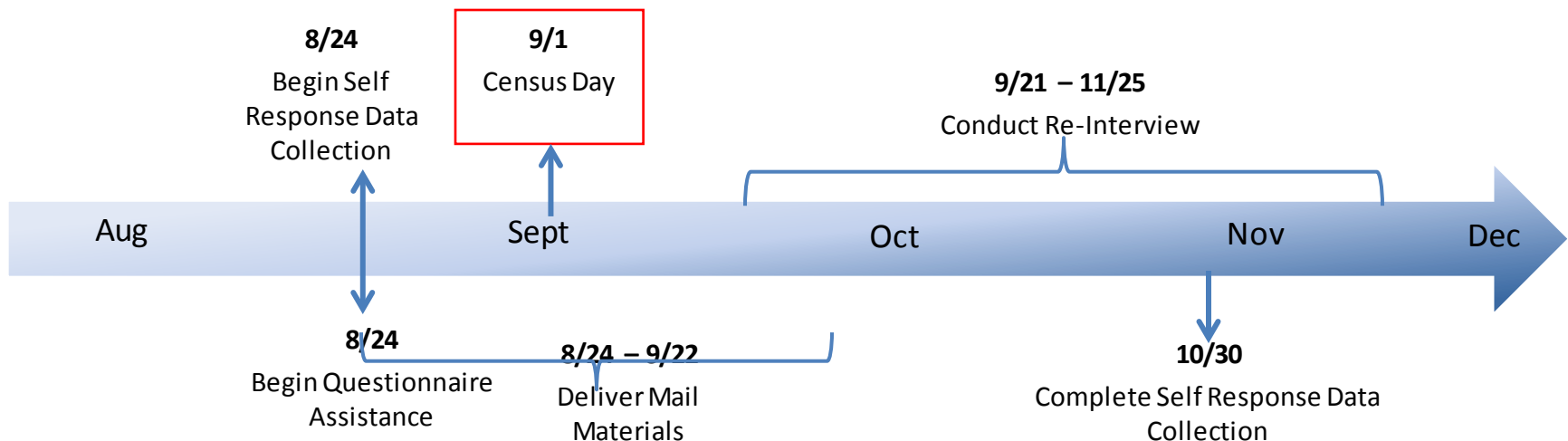
2015 National Content Test
Key Content Areas

Race and Hispanic Origin	Separate questions vs. combined question
	"Middle Eastern or North African" (MENA) category
	Instruction wording and question terminology
	Web-based questionnaire designs to improve question understanding and optimize reporting of detailed racial and ethnic groups
Relationship	2010 relationship response categories
	New relationship response categories
Within-Household Coverage	Rules-based approach
	Question-based approach

2015 National Content Test
Contact Strategies

Panel		#1	#2 (7 days later)	#3* (7 days later)	#4* (7 days later)	#5* (7 days later)
1	Internet Push (Control)	Letter	Postcard	Postcard	Mail Q'nnaire	
2	Internet Push with Early Postcard	Letter	Postcard (3 days sooner)	Postcard	Mail Q'nnaire	
3	Internet Push with Early Questionnaire	Letter	Postcard	Mail Q'nnaire	Postcard	
4	Internet Push with Even Earlier Questionnaire (Low response stratum only)	Letter	Mail Q'nnaire	Postcard	Postcard	
5	Internet Choice (Low response stratum only)	Mail Q'nnaire	Postcard	Postcard	Mail Q'nnaire	
6	Internet Push with Postcard as 3rd Reminder	Letter	Postcard	Postcard	Mail Q'nnaire	Postcard
7	Internet Push Postcard	Postcard	Postcard	Letter	Mail Q'nnaire	
8	Internet Push with Early Postcard and 2nd Letter Instead of Mail Q	Letter	Postcard (3 days sooner)	Postcard	Letter	
9	Internet Push with Postcard and Email as 1st Reminder (Same time)	Letter	Postcard and Email (3 days sooner)	Postcard	Mail Q'nnaire	

*Targeted to Nonrespondents

2016 Census Test

- April 1, 2016 Census Day
- A site test in parts of Los Angeles County, CA and Harris County, TX
  - Language diversity
  - Demographic diversity
  - High vacancy rates
  - Varying levels of Internet usage
  - Multiple locations across different time zones
  - Approximately 225,000 housing units in each test area
- Test Objectives
  - Refine technologies and methods for assigning cases to field staff conducting nonresponse follow-up
  - Explore self-response options
  - Provide non-English support for respondents with limited English proficiency – both in terms of our contact strategies and response options (Internet, paper, NRFU)
  - Study partnerships and outreach efforts to reach historically hard to count populations
  - Use of text messaging and Real Time Non-ID processing methods

2016 Address Canvassing Test

- Address Canvassing
  - Deliver a complete and accurate address list and spatial address database for enumeration
  - Determines the type and address characteristics for each living quarter
  - Combination of In-Office and In-Field methodologies and Quality Control processes for test areas in the United States and Puerto Rico
- Test Objectives:
  - New In-Office and In-Field Address Canvassing methods
  - Utilization of Listing and Mapping Instrument (LiMA)
  - Use of the Basic Collection Unit instead of traditional collection geography
  - Updates to the MAF/TIGER System and address matching and updating software for Puerto Rico
  - Reengineered methods for quality control
  - Updates to the MAF/TIGER System with address and spatial data

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2020 Census
Future Tests

- 2017 Census Test
  - April 1, 2017 Census Day
- 2018 End-to-End Test
  - Test critical systems and operations simultaneously to ensure readiness for the 2020 Census operations
  - Includes field data collection components
  - Timing of field operations will mimic the 2020 Census

2017 Integrated Tests
Field Test Refined IT Systems and Procedures

2017 April 1 Deliver 2020 Census Topics to Congress

2019 Census Begins: Early Operations

2020 April 1 Census Day

2018 Large-Scale End-to-End Test of Census Operations and Systems

2018 April 1 Deliver Question Working to Congress

2020 Census: Count the People
Tabulate Results
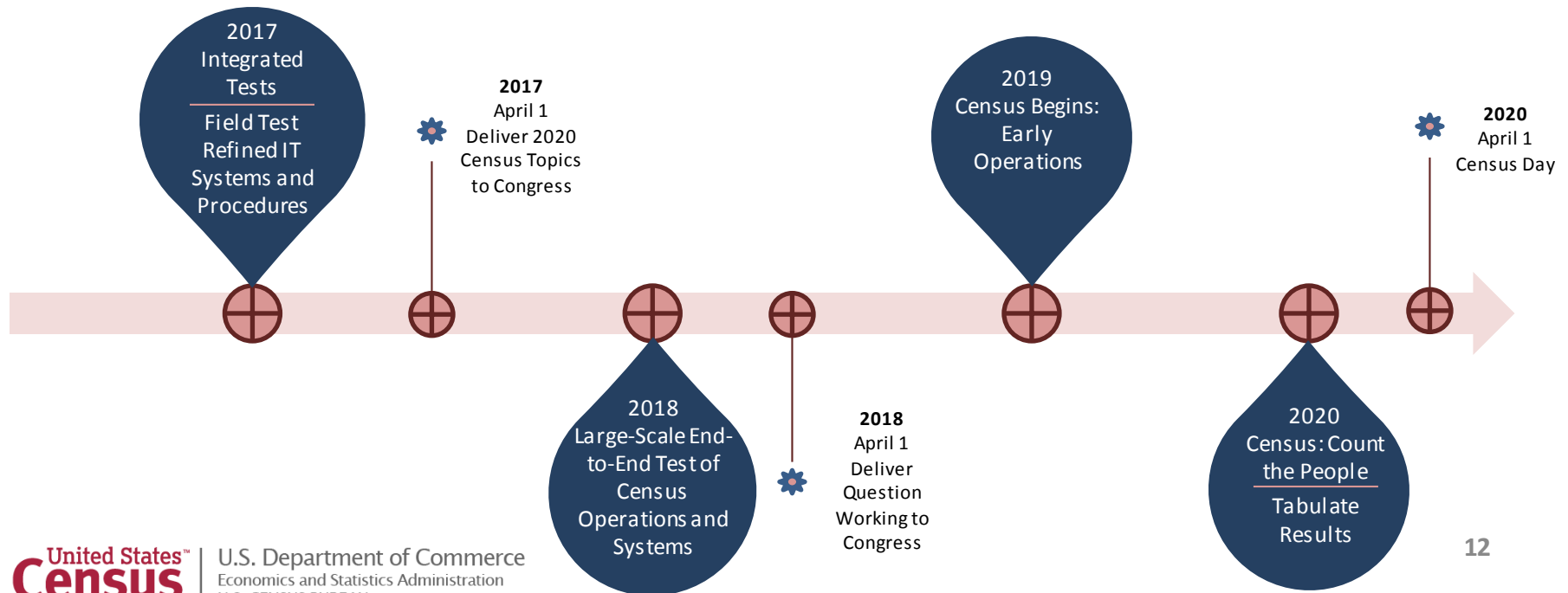
American Community Survey
Agility in Action

The Census Bureau is working to minimize burden for survey respondents while still allowing the survey to be responsive to emergent issues, keeping content current, and maintaining the high quality of data that our country demands and deserves.

Researching changes to ACS protocols by:

- Identifying and using data collected by other federal agencies
- Reducing in-person follow-up contact attempts
- Designing new survey mail package messages
- Evaluating changes to survey questions
- Communicating with customers on why we ask questions
- Increasing our awareness on how customers use ACS data
- Obtaining expert guidance
- Leveraging the Respondent Advocate to resolve respondent concerns
- Communicating strategically

Agility in Action: A Snapshot of Enhancements to the American Community Survey

U.S. Census Bureau
American Community Survey Office

Revised August 2015

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American Community Survey
Projects Addressing Respondent Concerns and Reducing Respondent Burden

Projects	Fiscal Year 2015			Fiscal Year 2016				Comments
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Envelope Mandatory Messaging Test		▓						Possible implementation in 2016
Additional Testing of Mandatory Messaging			▓					Possible implementation in 2016
Reducing Personal Visit Contact Attempts			▓	▓				Conduct pilot in August 2015, and implement in Spring 2016
Matrix Sampling: Operational and Statistical Assessment		▓						Initial assessment complete in September 2015
Field Test of Question Wording Changes Recommended by Federal Agencies					▓			To assess question changes proposed for 2017 and 2019
Testing Changes to Question Wording to Reduce Difficulty and Sensitivity	▓	▓	▓	▓	▓	▓	▓	Qualitative testing ongoing starting in 2015, and implement some changes in 2017
Matching Coverage and Quality Assessments of Administrative Records	▓	▓	▓	▓	▓	▓	▓	Coverage and quality assessments completed by September 2016
Question Review with Federal Agencies to Determine Data Requirements of Question Subparts	▓	▓	▓					Interim report produced in December 2015, and implement some changes in 2017
External Expert Consultations		▓	▓	▓				Providing input on reducing respondent concerns in general, and specific projects above

Census Enterprise Data Collection and Processing (CEDCaP)

CEDCaP will bring an enterprise approach to survey and census data collection and processing through shared services.
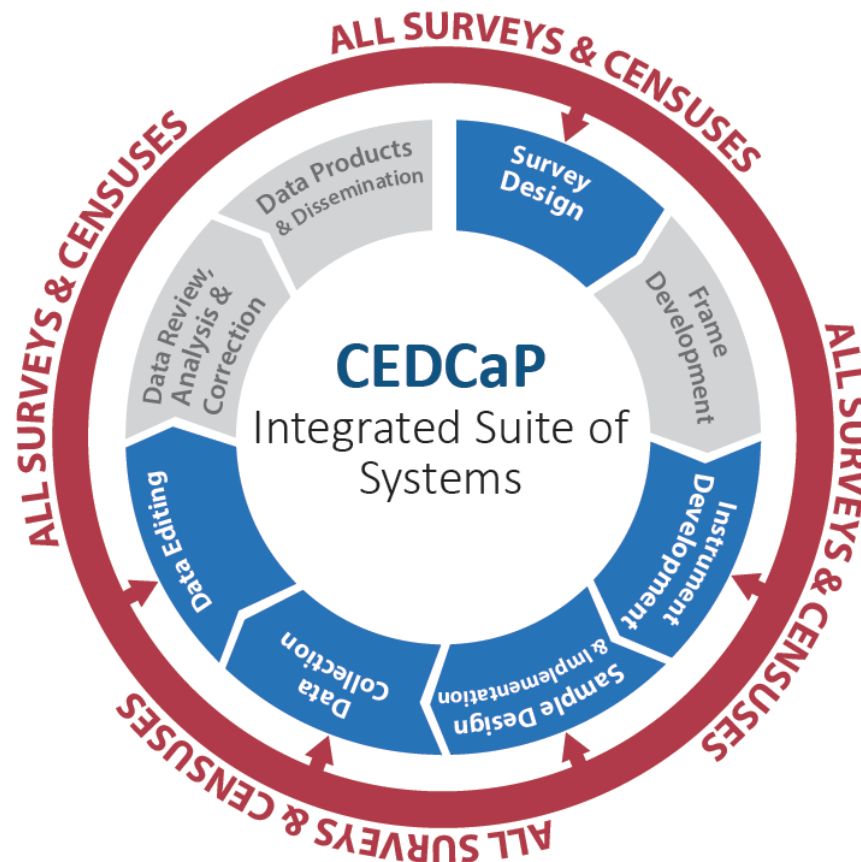
CEDCaP
Current State (Pre-CEDCaP) and End State
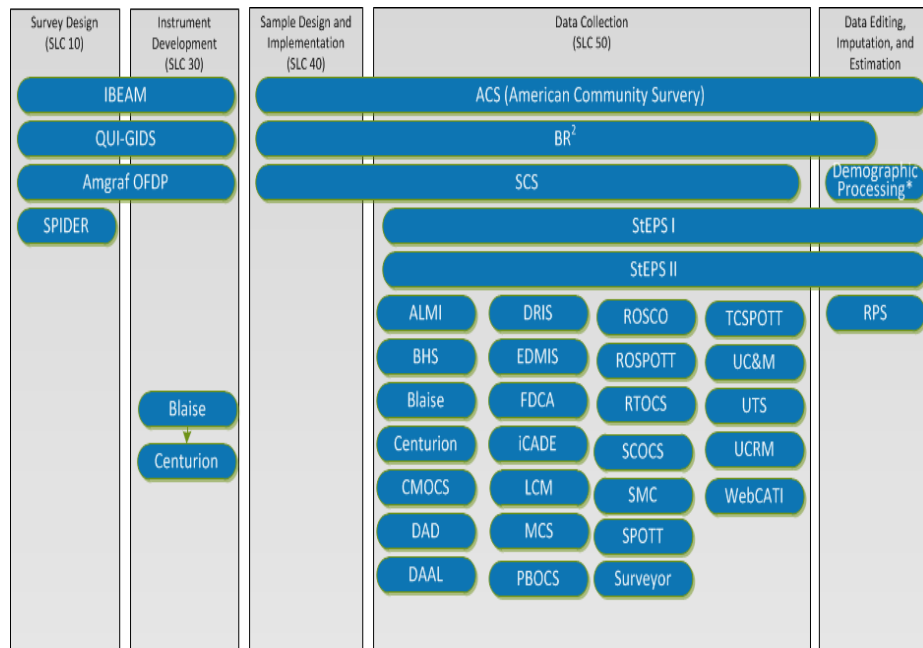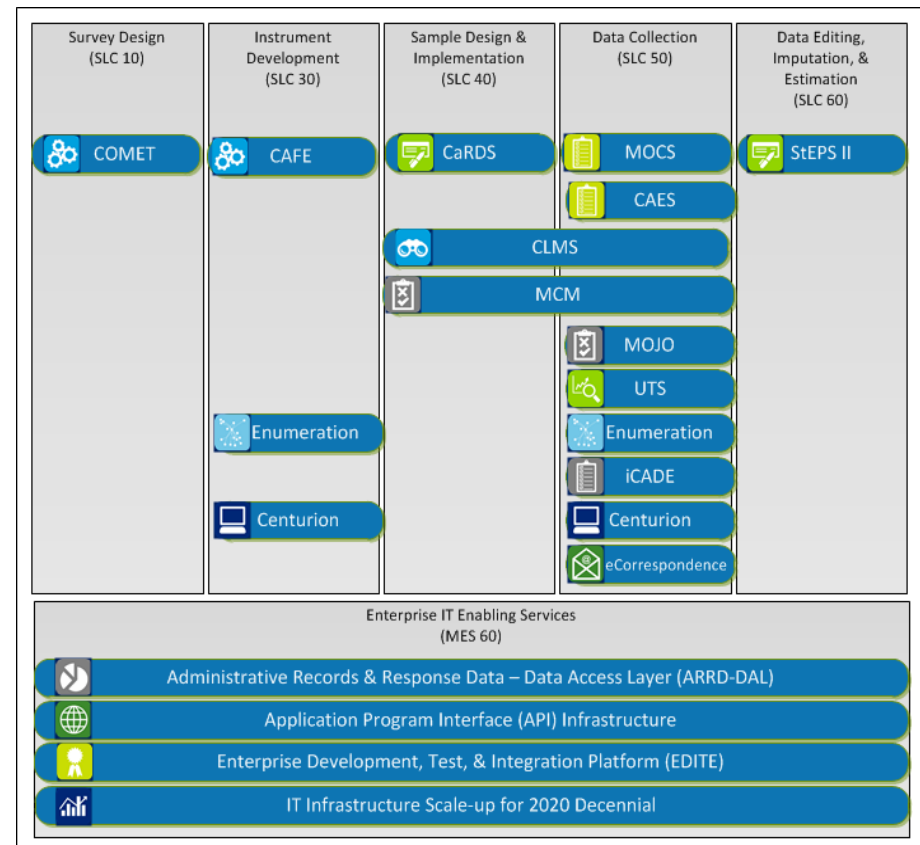
CEDCaP

Program Milestones

CEDCaP
Accomplishments

- Achieved Department of Commerce (DOC) Milestone 2 Review Approval from the Deputy Secretary of Commerce
- CEDCaP Capabilities released to support CAPI Tech Refresh (ACS & DEMO)
    - Questionnaire Design and Metadata (Content Metadata - CoMet) release
    - Address Listing and Mapping (LiMA) release
    - Survey (and Listing) Interview Operational Control (Mobile Case Management -MCM) release
    - Dashboard for Monitoring (Unified Tracking System- UTS) release
- CoMet released to production in support of 2015 COS/ASM
- Service Oriented Architecture (SOA) released to production
- Finalized Program-Level Systems Engineering Management Plan (SEMP) & Test and Evaluation Master Plan (TEMP)
- Finalized Segment Architecture and Transition Plans (second iterations)
- Developed CEDCaP Program-level Test and Evaluation Management Plan (TEMP), CEDCaP Program-level Systems Engineering Management Plan (SEMP) and CEDCaP Program-level End-to-End (e2e) Integration Testing Framework and Operational Model
- Implemented an enterprise IT Acquisition for Business Services Support (ITBSS) Enterprise Service Framework (ESF) with CEDCaP Task Order for program management support
- Successfully conducted testing of Centurion and an alternate application - Primus, in a cloud-based environment

CEDCaP
Upcoming Activities

- Implementing an enterprise IT Acquisition for Systems Engineering and Integration (SE&I) Services
- Developing Request for Quote (RFQ) for Commercial off-the-shelf (COTS) product(s) for assessment prior to final build/buy decisions
- Performing an assessment on the analysis of alternatives that includes comparing in-house custom solution(s) versus COTS product(s)
- Engaging Carnegie Melon (CM) Software Engineering Institute (SEI) to perform an independent assessment of CEDCaP's COTS assessment approach (e.g. inputs, evaluation criteria, process)
- CEDCaP Product Release 2 - 2015 COS/ASM (ECON)
  - o Internet and Mobile Data Collection (Centurion) release
  - o Dashboard for Monitoring (Unified Tracking System - UTS) release
  - o Scanning Data Capture from Paper (Integrated Capture and Data Entry – iCADE) release
  - o Mobile Case Management (MCM) release
- CEDCaP Product Release 3 - 2016 Census Test (Decennial)
  - o Questionnaire Design and Metadata (Content Metadata - CoMet) release
  - o Questionnaire Design and Metadata (Census Automated Forms Engine - CAFÉ) release
  - o Survey (and Listing) Interview Operational Control (Workload Planning and Collection Processing – MOJO) release
  - o Dashboard for Monitoring (Unified Tracking System - UTS) release

CEDCaP
Path to Progress

We are building now so CEDCaP will be ready to handle our data collection and processing needs of the 2020 Census.
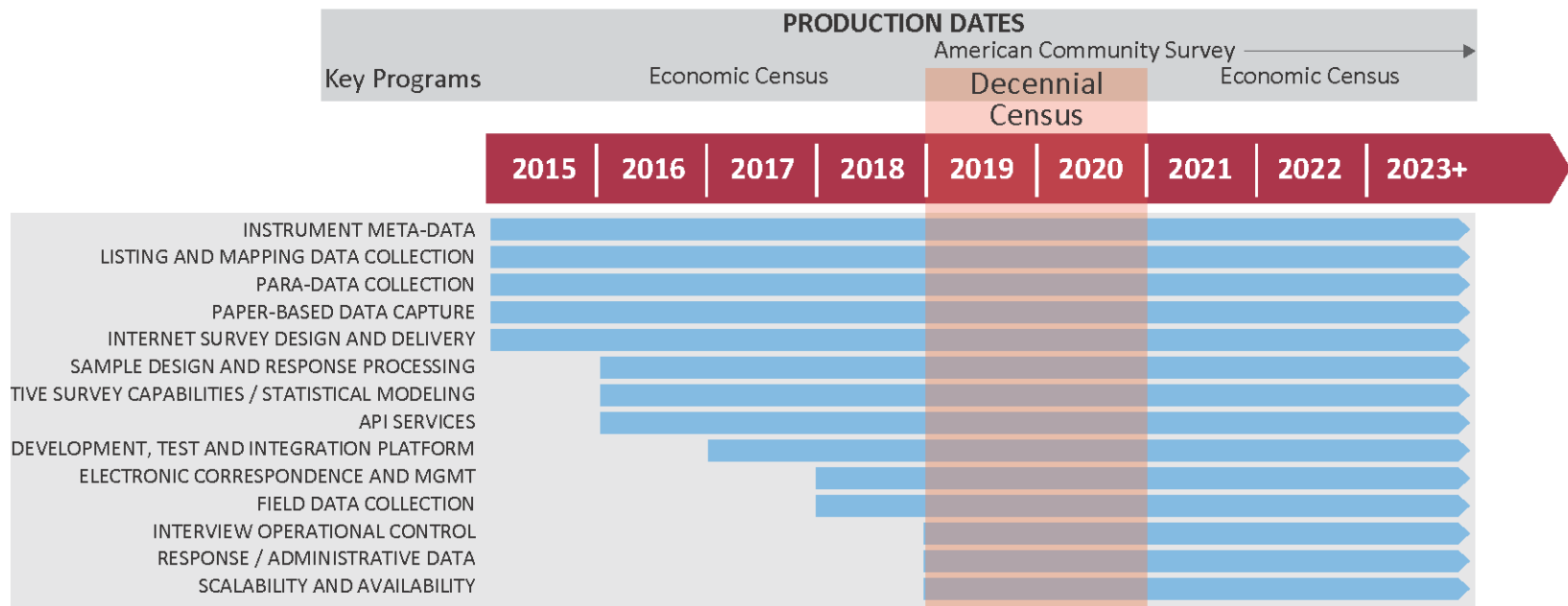
2020 Census Operational Plan

Documents the major design decisions for the 2020 Census, which includes:
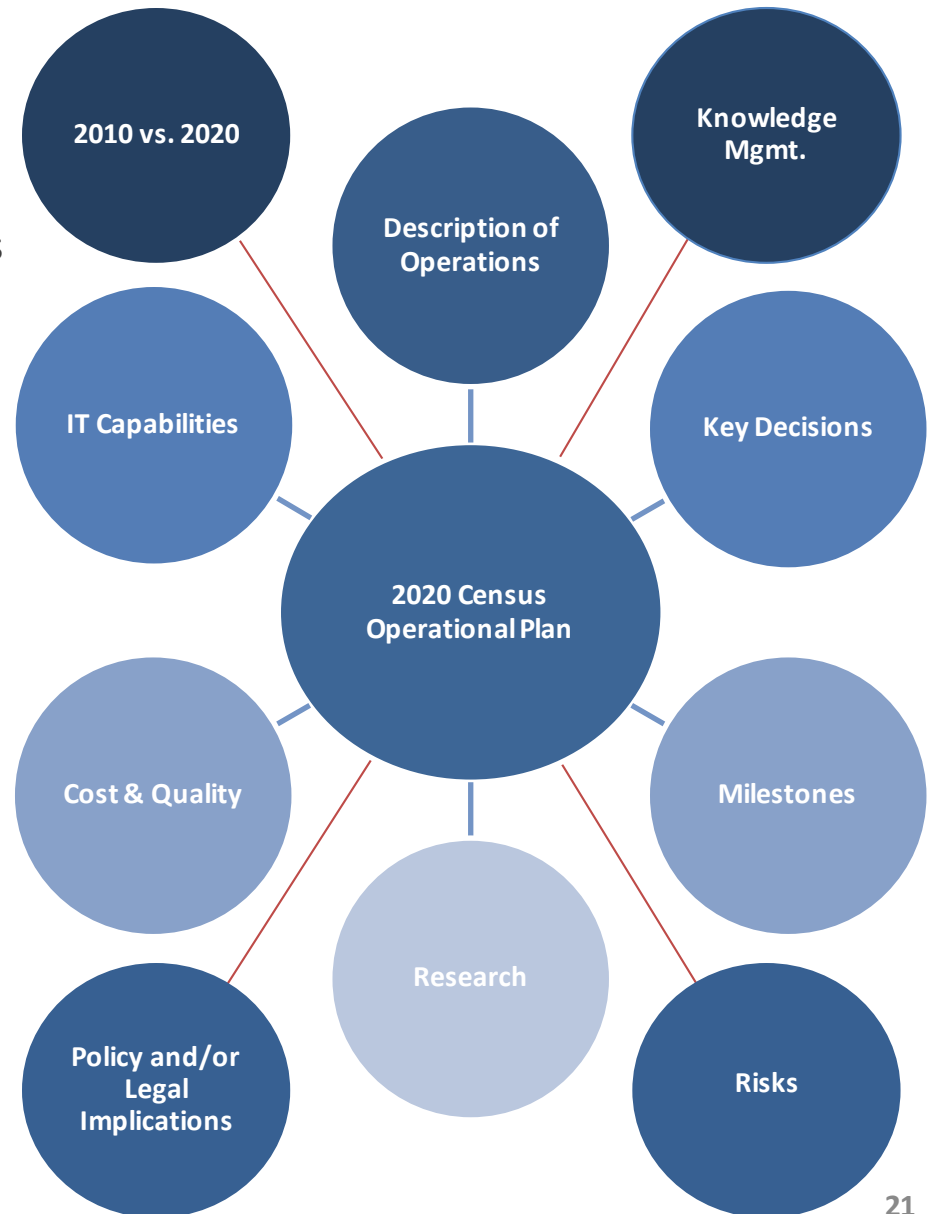
- 2020 Census Concept of Operations
  - Four Key Innovation Areas
  - Thirty-four 2020 Census Operational Areas
- Supporting documentation, including:
  - Lifecycle Cost Estimates
  - IT Architecture
  - Acquisition Strategy
- Communication materials

Project Management Review:
October 6, 2015
1:00 PM – 4:00 PM (EST)
www.census.gov/2020census

2020 Census Operational Plan
Operational Overview

The 2020 Census: A New Design for the 21st Century

Motivate People to Respond

Conduct a nation-wide communications and partnership campaign

- Work with trusted sources to inspire participation
- Maximize outreach using traditional and new media
- Target advertisements to specific audiences

Establish Where to Count

Identify all addresses where people could live

IN-FIELD   IN-OFFICE

- Conduct a 100% review and update of the nation's address list
- Minimize in-field work with in-office updating
- Use multiple data sources to identify areas with address changes
- Get local government input

TELEPHONE AND PAPER SELF-RESPONSE

NONRESPONSE FOLLOWUP

INTERNET SELF-RESPONSE

Count Everyone Once In the Right Place

Count the Population

Collect data from all households, including group and unique living arrangements

- Make it easy for people to respond anytime, anywhere
- Encourage people to use the new online response option
- Use the most cost-effective strategy to contact and count nonrespondents
- Streamline in-field census-taking
- Knock on doors only when necessary

Release Census Results

Process and Provide Census Data

- Deliver apportionment counts to the President by December 31, 2020
- Release counts for redistricting by April 1, 2021
- Make it easier for the public to get information

Questions?

For more information on the 2020 Census visit:
www.census.gov/2020census

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